



Translation

(1) **EU-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**

(3) **Certificate Number** TÜV 04 ATEX 2702 X **Issue:** 00
 (4) for the product: Positioner type TZIDC-xxx
 (5) of the manufacturer: **ABB AG (Division Measurement and Analytics)**
 (6) Address: Schillerstraße 72
 32425 Minden
 Germany
 Order number: 8003029263
 Date of issue: See date of signature

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential ATEX Assessment Report No. 21 203 290516.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN IEC 60079-7:2015/A1:2018 EN 60079-11:2012

except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the product shall include the following:

 II 2 G Ex ia IIC T6, T4 ... T1 Gb resp. II 2 G Ex ib IIC T6, T4 ... T1 Gb resp.
 II 3 G Ex ic IIC T6, T4 ... T1 Gc resp.
 II 2 D Ex ia IIIC T85 °C bzw. T125 °C Db resp. II 2 D Ex ib IIIC T85 °C bzw. T125 °C Db resp.
 II 3 G Ex ec IIC T6, T4 ... T1 Gc

TÜV NORD CERT GmbH, Am TÜV 1, 45307 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

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(13) **SCHEDULE**

(14) **EU-Type Examination Certificate TÜV 04 ATEX 2702 X Issue 00**

(15) Description of product

The Positioner type TZIDC-xxx is used for the control resp. closed loop control of pneumatic driven valves.

The Positioner type TZIDC resp. TZIDC-200 transfers the reference value by means of an impressed signal current of 4...20 mA.

The Positioner type TZIDC-110, TZIDC-210, TZIDC-120 resp. TZIDC-220 transfers the reference value via a field bus signal.

An integrated position sensor measures the current position of the valve drive. An integrated current/pressure transformer (I/P) is used for the pneumatic auxiliary power.

In addition to the integrated version, the TZIDCxxx positioner is also optionally available with a remote sensor.

Electrical data:

For type TZIDC resp. TZIDC-200, type of protection "Intrinsic Safety" with marking Ex ia IIC resp. Ex ib IIC resp. Ex ia IIIC resp. Ex ib IIIC	
Signal circuit (terminals 11(+), 12(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: $U_i = 30\text{ V}$ $I_i = 320\text{ mA}$ $P_i = 1.1\text{ W}$ $C_i = 6.6\text{ nF}$ $L_i =$ The effective internal capacitance is negligibly small.
Switch input (terminals 81(+), 82(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: $U_i = 30\text{ V}$ $I_i = 320\text{ mA}$ $P_i = 1.1\text{ W}$ $C_i = 14.5\text{ nF}$ $L_i =$ The effective internal inductance is negligibly small.
Switch output (terminals 83(+), 84(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: $U_i = 30\text{ V}$ $I_i = 320\text{ mA}$ $P_i = 500\text{ mW}$ $C_i = 14.5\text{ nF}$ $L_i =$ The effective internal inductance is negligibly small.
Local interface for communication (LCI)	Only for connection to a programmer outside of the explosive hazardous area. (Look also to the "conditions of certification")

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Optionally the following modules can be used:	
Plug-In module for digital feedback (terminals 51(+), 52(-) resp. 41(+), 42(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: $U_i = 30 \text{ V}$ $I_i = 320 \text{ mA}$ $P_i = 250 \text{ mW}$ $C_i = 3.7 \text{ nF}$ $L_i =$ The effective internal inductance is negligibly small.
Mechanical digital feed back (terminals 51(+), 52(-) Limit1 resp. 41(+), 42(-) Limit2)	Maximum values see EC-Type Examination Certificate PTB 00 ATEX 2049 X (Slot-type initiators of the company Pepperl & Fuchs)
Plug-In module for analogue position feedback (terminals 31(+), 32(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: $U_i = 30 \text{ V}$ $I_i = 320 \text{ mA}$ $P_i = 1.1 \text{ W}$ $C_i = 6.6 \text{ nF}$ $L_i =$ The effective internal inductance is negligibly small.

For type TZIDC-110, TZIDC-210, TZIDC-120 resp. TZIDC-220 with marking Ex ia IIC resp. Ex ib IIC resp. Ex ic IIC			
Input circuit (terminals 11(+), 12(- resp. +, -))	only for the connection to a certified Power supply and following maximum values:		
	Power Supply or Barrier	FISCO-Power Supply (only valid for TZIDC-120 resp. TZIDC-220)	
Voltage	24 V	17.5 V	17.5 V
Current	250 mA	380 mA	360 mA
Power	1.2 W	5.32 W	2.52 W
Characteristic line	Linear	rectangular	trapezoid
$C_i =$ The effective internal capacitance and inductance are negligibly small. $L_i =$ The effective internal inductance is negligibly small.			
Optionally the following modules are allowed to be used:			
Mechanical digital feed back (terminals 51(+), 52(-) Limit1 resp. 41(+), 42(-) Limit2)	Maximum values see EC-Type Examination Certificate PTB 00 ATEX 2049 X (Slot-type initiators of the company Pepperl & Fuchs)		
Local interface for communication (LCI)	Only for connection to a programmer outside of the explosive hazardous area. (Look also to the "conditions of certification")		

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For type TZIDC, TZIDC-110 resp. TZIDC-120 with marking Ex ec IIC	
Type TZIDC	
Signal circuit (terminals 11(+), 12(-))	U = 9.7 V DC I = 4...20 mA, max. 21.5 mA
Switch input (terminals 81(+), 82(-))	U = 12...24 V DC; I = 4 mA
Switch output (terminals 83(+), 84(-))	U = 11 VDC
Optionally the following modules can be used with type TZIDC:	
Plug-In module for analogue feedback (terminals 31(+), 32(-))	U = 10...30 VDC I = 4...20 mA, max. 21.5 mA
Type TZIDC-110	
Input circuit (terminals 11(+), 12(-))	U = 9...32 V DC I = 10.5 mA
Type TZIDC-120	
Input circuit (terminals 11(+), 12(-))	U = 9...32 V DC I = 11.5 mA
Additionally the following modules are allowed to be used with all types:	
Mechanical digital feedback (terminals 51(+), 52(-) resp. 41(+), 42(-))	U = 5...11 V DC

The permissible ambient temperature range, temperature marking in dependence on the type, the type of protection and the Temperature Classes has to be taken from the following table:

Type	TZIDC resp. TZIDC-200 TZIDC-110/-210/-120/-220	TZIDC resp. TZIDC-110/-120	TZIDC resp. TZIDC-200	
Type of protection	Ex ia IIC resp. Ex ib IIC resp. Ex ic IIC	Ex ec IIC	Ex ia IIIC resp. Ex ib IIIC	
Temperature Class	Ambient temperature range		Temperature marking	Ambient temp. range
T4 to T1	-40 °C to +85 °C	-35 °C to +85 °C	T 125°C	-35 °C to +85 °C
T6*	-40 °C to +40 °C	-35 °C to +50 °C	T 85°C	-35 °C to +40 °C

* For use with „ Plug-In module for digital feed back“ in the temperature class T6, the permissible ambient temperature range is -40 °C to +35 °C.

(16) Drawings and documents are listed in the ATEX Assessment Report No. 21 203 290516

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(17) Specific Conditions for Use

The "Local communication interface (LCI)" of the TZIDC and TZIDC-200 may only be used outside of the explosion hazardous area with $U_m \leq 30 \text{ V DC}$.

The positioner type TZIDC may only be operated as a source of auxiliary energy with gases of the group IIA and the temperature class T1 in outdoor applications or inside of buildings with sufficient ventilation.

The fed gas must be free of air and oxygen insofar as no explosive atmosphere can occur. The exhaust gas must always let outwards.

For use as II 2D apparatus the TZIDC and TZIDC200 equipment may only be used in areas with low risk of mechanical danger.

Cable entries which meet the requirements of EN 60079-11 for category II 2D; TZIDC and TZIDC-200, as well as the ambient temperature range have to be used.

TZIDC-200 variants, which also comply with the type of protection "Flameproof Enclosure" according to a separate certificate, may not be operated in the type of protection "Intrinsically Safe" after use as apparatus in the type of protection "Flameproof Enclosure".

The TZIDC and TZIDC-200 for use in combustible dust an electrostatic charge due to propagating brush discharges has to be avoided, when the equipment is used for Applications involving combustible dust.

Conditions of TZIDC, TZIDC-110 and TZIDC-120 for safe use of Ex ec IIC:

Only devices which are suitable for the operation in potentially explosion hazardous areas, declared as zone 2 and the conditions available at the place of operation are allowed to be connected to circuits in the zone 2 (manufacturer's declaration or certificate from the test centre).

For the circuit "Mechanical digital feedback" measures have to be taken outside the device that the rated voltage is exceeded not more than 40% by transient disturbances.

The connecting and disconnecting as well as the switching of circuits under voltage are only permitted during installation, for maintenance or repair purposes.

Note: The temporal coincidence of explosion hazardous atmosphere and installation, maintenance resp. repair purposes in zone 2 is assessed as improbably.

Only non combustible gases are allowed to be used as pneumatic auxiliary energy.

Only suitable cable entries which meet the requirements of EN 60079-15 resp. EN 60079-7 are allowed to be used.

(18) Essential Health and Safety Requirements

no additional ones

- End of EU-Type Examination Certificate -